



NS - 371

V Semester B.Sc. Examination, November/December 2016  
(F + R/CBCS)  
BIOTECHNOLOGY - V  
Genetic Engineering and Environmental Biotechnology

Time : 3 Hours

Max. Marks : 70

**Instruction :** Draw neat labelled diagrams wherever necessary.

SECTION - A

- I. Write short notes on the following (5×2=10)
- 1) p<sup>UC</sup> 19
  - 2) Isoschizomers
  - 3) Renewable resources
  - 4) VAM
  - 5) Southern blotting.

SECTION - B

- II. Answer any four of the following : (4×5=20)
- 6) Explain electroporation method of gene transfer.
  - 7) What are restriction enzymes ? Explain the types.
  - 8) Write a note on symbiotic nitrogen fixing bacteria.
  - 9) Enumerate the differences between AGE and PAGE.
  - 10) What is bioleaching ? Mention its applications.

SECTION - C

- III. Answer any three of the following : (3×10=30)
- 11) What is bio-remediation ? Explain the methods of bioremediation of contaminated soil.
  - 12) Write notes on the following :
    - a) Immunological screening
    - b) Micro injection.

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- 13) Describe the production of recombinant insulin.
- 14) What are conventional fuels ? Enumerate their environmental impact.
- 15) What are vectors ? Explain bacteriophage as cloning vector.

## SECTION - D

IV. Answer the following : (10×1=10)

- 16) List any two uranium leaching microorganisms.
- 17) What is annealing ?
- 18) Name the antibiotic resistance markers in p<sup>BR 322</sup>.
- 19) What are biopesticides ?
- 20) Define Gasohol.
- 21) Write the function of RNase H.
- 22) What is genomic library ?
- 23) What is reverse osmosis ?
- 24) Write one application of M<sub>13</sub> bacteriophage.
- 25) Give any two examples of methanogenic bacteria.

**BMSCW**